

US EPA ARCHIVE DOCUMENT



AN ENVIRONMENTAL ANALYTICAL LABORATORY

3/23/2009

Mr. Doug Lam  
Trihydro Corporation  
5000 State Route 128

Cleves OH 45002

Project Name: Hooven VI 2008-2009  
Project #: 500-016-012  
Workorder #: 0903253B

Dear Mr. Doug Lam

The following report includes the data for the above referenced project for sample(s) received on 3/10/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Brandon Dunmore at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

A handwritten signature in black ink that reads 'Brandon M. Dunmore'.

Brandon Dunmore  
Project Manager

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
(916) 985-1000 .FAX (916) 985-1020  
Hours 8:00 A.M to 6:00 P.M. Pacific



AN ENVIRONMENTAL ANALYTICAL LABORATORY

## WORK ORDER #: 0903253B

### Work Order Summary

**CLIENT:** Mr. Doug Lam  
Trihydro Corporation  
5000 State Route 128  
Cleveland, OH 45002

**BILL TO:** Mr. Tim Gunn  
Trihydro Corporation  
5000 State Route 128  
Cleveland, OH 45002

**PHONE:**

**P.O. #** 08-050WO-L

**FAX:**

**PROJECT #** 500-016-012 Hooven VI 2008-2009

**DATE RECEIVED:** 03/10/2009

**CONTACT:** Brandon Dunmore

**DATE COMPLETED:** 03/23/2009

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VW-96(55),030409	Modified ASTM D-1946	8.0 "Hg	15 psi
01AA	VW-96(55),030409 Lab Duplicate	Modified ASTM D-1946	8.0 "Hg	15 psi
02A	VW-96(50),030409	Modified ASTM D-1946	4.0 "Hg	15 psi
03A	VW-96(45),030409	Modified ASTM D-1946	3.0 "Hg	15 psi
04A	VW-96(40),030409	Modified ASTM D-1946	2.5 "Hg	15 psi
05A	VW-96(35),030409	Modified ASTM D-1946	3.0 "Hg	15 psi
06A	VW-96(30),030409	Modified ASTM D-1946	5.0 "Hg	15 psi
07A	VW-96(25),030409	Modified ASTM D-1946	5.0 "Hg	15 psi
08A	VW-96(20),030509	Modified ASTM D-1946	7.0 "Hg	15 psi
09A	VW-96(15),030509	Modified ASTM D-1946	3.5 "Hg	15 psi
10A	VW-96(10),030509	Modified ASTM D-1946	6.0 "Hg	15 psi
11A	VW-96(5),030509	Modified ASTM D-1946	5.0 "Hg	15 psi
12A	BD-1,030509	Modified ASTM D-1946	6.0 "Hg	15 psi
13A	Lab Blank	Modified ASTM D-1946	NA	NA
13B	Lab Blank	Modified ASTM D-1946	NA	NA
14A	LCS	Modified ASTM D-1946	NA	NA

CERTIFIED BY:

DATE: 03/23/09

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004  
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE****Modified ASTM D-1946****Trihydro Corporation****Workorder# 0903253B**

Twelve 1 Liter Summa Canister (100% Certified) samples were received on March 10, 2009. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 3-point calibration curve is performed. Quantitation is based on a daily calibration standard which may or may not resemble the composition of the associated samples.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a $\geq 95\%$ accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections $> 5 \times$ the RL.

### **Receiving Notes**

There were no receiving discrepancies.

### **Analytical Notes**

There were no analytical discrepancies.

### **Definition of Data Qualifying Flags**

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



AN ENVIRONMENTAL ANALYTICAL LABORATORY

## Summary of Detected Compounds NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VW-96(55),030409

Lab ID#: 0903253B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.28	1.7
Nitrogen	0.28	76
Methane	0.00028	12
Carbon Dioxide	0.028	9.6
Ethane	0.0028	0.0067

Client Sample ID: VW-96(55),030409 Lab Duplicate

Lab ID#: 0903253B-01AA

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.28	1.7
Nitrogen	0.28	76
Methane	0.00028	12
Carbon Dioxide	0.028	9.6
Ethane	0.0028	0.0068

Client Sample ID: VW-96(50),030409

Lab ID#: 0903253B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	1.3
Nitrogen	0.23	75
Methane	0.00023	12
Carbon Dioxide	0.023	11
Ethane	0.0023	0.0065

Client Sample ID: VW-96(45),030409

Lab ID#: 0903253B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.3
Nitrogen	0.22	79
Methane	0.00022	9.3
Carbon Dioxide	0.022	9.7
Ethane	0.0022	0.0048



AN ENVIRONMENTAL ANALYTICAL LABORATORY

## Summary of Detected Compounds NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VW-96(40)030409

Lab ID#: 0903253B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.3
Nitrogen	0.22	80
Methane	0.00022	8.8
Carbon Dioxide	0.022	9.9
Ethane	0.0022	0.0044

Client Sample ID: VW-96(35)030409

Lab ID#: 0903253B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.4
Nitrogen	0.22	81
Methane	0.00022	7.9
Carbon Dioxide	0.022	9.5
Ethane	0.0022	0.0039

Client Sample ID: VW-96(30)030409

Lab ID#: 0903253B-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	1.4
Nitrogen	0.24	82
Methane	0.00024	7.2
Carbon Dioxide	0.024	9.6
Ethane	0.0024	0.0037

Client Sample ID: VW-96(25)030409

Lab ID#: 0903253B-07A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	1.4
Nitrogen	0.24	82
Methane	0.00024	6.3
Carbon Dioxide	0.024	10
Ethane	0.0024	0.0033



AN ENVIRONMENTAL ANALYTICAL LABORATORY

## Summary of Detected Compounds NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VW-96(20)030509

Lab ID#: 0903253B-08A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	2.7
Nitrogen	0.26	88
Methane	0.00026	0.26
Carbon Dioxide	0.026	9.3

Client Sample ID: VW-96(15)030509

Lab ID#: 0903253B-09A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	4.4
Nitrogen	0.23	87
Methane	0.00023	0.12
Carbon Dioxide	0.023	8.4

Client Sample ID: VW-96(10)030509

Lab ID#: 0903253B-10A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	10
Nitrogen	0.25	84
Methane	0.00025	0.49
Carbon Dioxide	0.025	5.2

Client Sample ID: VW-96(5)030509

Lab ID#: 0903253B-11A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	19
Nitrogen	0.24	80
Methane	0.00024	0.0039
Carbon Dioxide	0.024	0.97

Client Sample ID: BD-1,030509

Lab ID#: 0903253B-12A





AN ENVIRONMENTAL ANALYTICAL LABORATORY

## Summary of Detected Compounds

### NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: BD-1,030509

Lab ID#: 0903253B-12A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	10
Nitrogen	0.25	84
Methane	0.00025	0.48
Carbon Dioxide	0.025	5.2



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-96(55),030409

Lab ID#: 0903253B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031213	Date of Collection: 3/4/09 11:35:00 AM
Dil. Factor:	2.76	Date of Analysis: 3/12/09 03:45 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.28	1.7
Nitrogen	0.28	76
Carbon Monoxide	0.028	Not Detected
Methane	0.00028	12
Carbon Dioxide	0.028	9.6
Ethane	0.0028	0.0067
Ethene	0.0028	Not Detected
Helium	0.14	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



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Client Sample ID: VW-96(55),030409 Lab Duplicate

Lab ID#: 0903253B-01AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031214	Date of Collection: 3/4/09 11:35:00 AM
Dil. Factor:	2.76	Date of Analysis: 3/12/09 04:07 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.28	1.7
Nitrogen	0.28	76
Carbon Monoxide	0.028	Not Detected
Methane	0.00028	12
Carbon Dioxide	0.028	9.6
Ethane	0.0028	0.0068
Ethene	0.0028	Not Detected
Helium	0.14	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-96(50),030409

Lab ID#: 0903253B-02A

**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

<b>File Name:</b>	<b>9031215</b>	<b>Date of Collection:</b> 3/4/09 2:38:00 PM
<b>Dil. Factor:</b>	<b>2.33</b>	<b>Date of Analysis:</b> 3/12/09 04:37 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	1.3
Nitrogen	0.23	75
Carbon Monoxide	0.023	Not Detected
Methane	0.00023	12
Carbon Dioxide	0.023	11
Ethane	0.0023	0.0065
Ethene	0.0023	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-96(45),030409

Lab ID#: 0903253B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031216	Date of Collection: 3/4/09 3:25:00 PM
Dil. Factor:	2.24	Date of Analysis: 3/12/09 05:07 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.3
Nitrogen	0.22	79
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	9.3
Carbon Dioxide	0.022	9.7
Ethane	0.0022	0.0048
Ethene	0.0022	Not Detected
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-96(40)030409

Lab ID#: 0903253B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031217	Date of Collection:	3/4/09 3:55:00 PM
Dil. Factor:	2.20	Date of Analysis:	3/12/09 05:32 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.3
Nitrogen	0.22	80
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	8.8
Carbon Dioxide	0.022	9.9
Ethane	0.0022	0.0044
Ethene	0.0022	Not Detected
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: VW-96(35)030409**

**Lab ID#: 0903253B-05A**

**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

<b>File Name:</b>	<b>9031218</b>	<b>Date of Collection:</b> 3/4/09 4:25:00 PM
<b>Dil. Factor:</b>	<b>2.24</b>	<b>Date of Analysis:</b> 3/12/09 05:54 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.4
Nitrogen	0.22	81
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	7.9
Carbon Dioxide	0.022	9.5
Ethane	0.0022	0.0039
Ethene	0.0022	Not Detected
Helium	0.11	Not Detected

**Container Type: 1 Liter Summa Canister (100% Certified)**



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-96(30)030409

Lab ID#: 0903253B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031219	Date of Collection:	3/4/09 5:05:00 PM
Dil. Factor:	2.42	Date of Analysis:	3/12/09 06:17 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	1.4
Nitrogen	0.24	82
Carbon Monoxide	0.024	Not Detected
Methane	0.00024	7.2
Carbon Dioxide	0.024	9.6
Ethane	0.0024	0.0037
Ethene	0.0024	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)





AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-96(25)030409

Lab ID#: 0903253B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031220	Date of Collection: 3/4/09 3:40:00 PM
Dil. Factor:	2.42	Date of Analysis: 3/12/09 06:39 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	1.4
Nitrogen	0.24	82
Carbon Monoxide	0.024	Not Detected
Methane	0.00024	6.3
Carbon Dioxide	0.024	10
Ethane	0.0024	0.0033
Ethene	0.0024	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-96(20)030509

Lab ID#: 0903253B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031221	Date of Collection: 3/5/09 9:10:00 AM
Dil. Factor:	2.64	Date of Analysis: 3/12/09 07:04 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	2.7
Nitrogen	0.26	88
Carbon Monoxide	0.026	Not Detected
Methane	0.00026	0.26
Carbon Dioxide	0.026	9.3
Ethane	0.0026	Not Detected
Ethene	0.0026	Not Detected
Helium	0.13	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-96(15)030509

Lab ID#: 0903253B-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031222	Date of Collection: 3/5/09 9:55:00 AM
Dil. Factor:	2.29	Date of Analysis: 3/12/09 07:52 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	4.4
Nitrogen	0.23	87
Carbon Monoxide	0.023	Not Detected
Methane	0.00023	0.12
Carbon Dioxide	0.023	8.4
Ethane	0.0023	Not Detected
Ethene	0.0023	Not Detected
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-96(10)030509

Lab ID#: 0903253B-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031223	Date of Collection: 3/5/09 11:35:00 AM
Dil. Factor:	2.53	Date of Analysis: 3/12/09 08:13 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	10
Nitrogen	0.25	84
Carbon Monoxide	0.025	Not Detected
Methane	0.00025	0.49
Carbon Dioxide	0.025	5.2
Ethane	0.0025	Not Detected
Ethene	0.0025	Not Detected
Helium	0.13	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: VW-96(5)030509

Lab ID#: 0903253B-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031224	Date of Collection: 3/5/09 12:55:00 PM
Dil. Factor:	2.42	Date of Analysis: 3/12/09 08:35 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	19
Nitrogen	0.24	80
Carbon Monoxide	0.024	Not Detected
Methane	0.00024	0.0039
Carbon Dioxide	0.024	0.97
Ethane	0.0024	Not Detected
Ethene	0.0024	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: BD-1,030509

Lab ID#: 0903253B-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031225	Date of Collection: 3/5/09 1/1/1990
Dil. Factor:	2.53	Date of Analysis: 3/12/09 08:57 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	10
Nitrogen	0.25	84
Carbon Monoxide	0.025	Not Detected
Methane	0.00025	0.48
Carbon Dioxide	0.025	5.2
Ethane	0.0025	Not Detected
Ethene	0.0025	Not Detected
Helium	0.13	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0903253B-13A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	9031204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/12/09 10:01 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	Not Detected
Carbon Monoxide	0.010	Not Detected
Methane	0.00010	Not Detected
Carbon Dioxide	0.010	Not Detected
Ethane	0.0010	Not Detected
Ethene	0.0010	Not Detected

Container Type: NA - Not Applicable



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0903253B-13B

**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

File Name:	9031203b	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/12/09 09:39 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable





AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0903253B-14A

**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

File Name: 9031228  
Dil. Factor: 1.00

Date of Collection: NA  
Date of Analysis: 3/12/09 10:12 PM

Compound	%Recovery
Oxygen	100
Nitrogen	100
Carbon Monoxide	100
Methane	103
Carbon Dioxide	101
Ethane	102
Ethene	102
Helium	106

Container Type: NA - Not Applicable